8. (New) The method of claim 1, wherein the simulating includes associating a cell in the secondary lookup table with a location of a cell in the default colormap and returning the location of the cell in the default colormap to the application program as a response to the intercepted request.

REMARKS

Claims 1-6 were pending prior to this amendment and response. Independent claim 1 was amended to stress that a private colormap is not placed in the frame buffer (to avoid flashing caused by swapping of colormaps). Claim 2 was amended to correct antecedent basis from claim 1. Independent claim 3 was amended to stress that simulation is achieved in part by providing a reference to the default colormap rather than creating a new private colormap. New dependent claims 7 and 8 were added to further protect features of the private colormap simulation that is performed in a manner that is transparent to the requesting application but that does not require swapping of the colormap stored in the frame buffer.

No new matter is introduced by the Amendment with support found at least with reference to Figures 4A, 4B, and 5 and associated text in the specification. Claims 1–8 remain in the application for consideration by the Examiner.

Rejection under 35 U.S.C. § 102

In the October 22, 2002 Office Action, claims 1, 2, and 6 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 5,703,627 ("Young"). This rejection is traversed based on the claim amendments and following remarks.

Generally, the invention is directed toward preventing colormap flashing by simulating allocation of a private colormap – without actually ever developing or creating such a private colormap. Colormap flashing occurs when a switch is made between a default colormap and a private colormap. As discussed in the specification at page 10, lines 13-23, simulating allocation of a private colormap "involves transparently using a secondary lookup table...having entries which are mapped to the entries of the default colormap. This secondary lookup table is used so that the application program...'believes' that it is still properly obtaining an allocated private colormap for its use, however, in actuality the default colormap is utilized. In this general manner, colormap flashing is prevented since the default colormap is retained

in the frame buffer, rather than being swapped out. Instead of returning a 'private' colormap, the software returns a reference to the default colormap and then provides functionality so that the default colormap behaves like a private colormap." These features are not taught or suggested by Young which reduces or controls flashing but does profess to eliminate it (see, Abstract line 1, and lines 11-15 which note that copied cells from the default colormap to created private map cells do not flash – but, of course, the other cells would flash).

More particularly, independent claim 1 calls for a method that involves "intercepting a request...for an allocation of a private colormap" and in response "transparently simulating the allocation of the private colormap using a default colormap." The simulation (not actual creation) is performed as "the default colormap is retained in the frame buffer during the simulating" and instead of creating a private colormap "allocating a secondary lookup table for storing information received from the application program relating to the intercepted request." In the method of claim 1, the cells do not color flash because the method forces all requesting applications, even those requesting private colormaps, to use the same colormap, i.e., the default colormap, which avoids the later swapping from one colormap to another where some cells differ, which causes display flashing. These features of the method are not shown or suggested by Young and claim 1 is believed in condition for allowance.

Specifically, Young is cited for teaching all the elements of claim 1 in the Abstract, at col. 5, lines 2-5, and col. 6, lines 57-62. However, the Abstract discusses copying color values from the default colormap into a created private map which reduces flashing because these copied cells will not flash upon a later swap to a next colormap but cells that are not copied will flash (see, for example, Young at col. 5, line 66 where Young admits that a number of cells (such as those shown in Figures 5A and 5B) will differ and will flash). This is because a private colormap is created and placed in the frame buffer. The second technique of Young referred to as "colormap sharing" is discussed with reference to Figs. 6 and 7 and beginning at col. 6, line 19. This sharing simply teaches creating a private colormap that "shares" or copies all of the default colormap cells. Hence, flashing does not occur the application and swapping to the default but does occur upon switching to another application that has not established its private colormap in the same manner.

In contrast, the method of claim 1 does not build a new private colormap to control flashing, but instead retains the default colormap in the frame buffer. Each of the techniques of Young involves creating a new private colormap and then placing it in the frame buffer. Hence, Young does not teach each of the elements of the method of claim 1. Additionally, Young fails to teach the creation of a secondary lookup table for storing information from an applications request for a private colormap (but instead teaches the creation of private maps (see Figs. 3A-8B)). Hence, claim 1 is believed allowable over Young.

Claim 2 is dependent on claim 1 and is believed allowable for the reasons for allowing claim 1 provided above. Further, Claim 2 requires that a closest match be determined for a requested color to a color stored in the default colormap and then returning the match to the application. As noted in the Office Action on page 4, line 9, Young does not teach such a performing. Hence, Young does not anticipate claim 2.

Claim 6 is directed to a method similar to claim 1 but calls for "determining whether a private color cell has been requested by the application program and writing said color cell to the default colormap." The Office Action again cited the Abstract, col. 5, lines 2-5, and col. 6, lines 57-62 in Young for teaching this element. However, these portions of Young discuss determining free portions of the default colormap and copying cells from the private colormap to the default (see Abstract), but Young does not call for a "private cell" determination, i.e., copies all cells into the default as possible to control flashing. Additionally, the color information is copied from a created private colormap and not simply written from a request for a private colormap as called for in claim 6. Hence, each element of claim 6 is not shown or suggested by Young, and claim 6 is believed allowable over the cited art.

Rejection under 35 U.S.C. § 103

Additionally, in the October 22, 2002 Office Action, claims 2, 3, and 4 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Young as applied to claim 1 further in view of U.S. Patent 5,406,310 ("Aschenbrenner"). This rejection is traversed based on the claim amendments and the following remarks.

Claim 2 depends from claim 1 and is believed allowable for the reasons for allowing claim 1. Further, it is believed that Aschenbrenner fails to overcome the

deficiencies of Young. Specifically, the method of claim 2 includes a step of allocating a secondary lookup table but this step is not found in Young or Aschenbrenner. In the closest color set process described in Aschenbrenner at col. 6, lines 22-31, the user must select or choose the closest color routine which causes the process to be visible or not transparent. Additionally image colors that cannot be loaded into a default table that were requested by an application program are compared against the colors in the default table and then the closest match is "substitute for the unloaded color" and then, according to Figure 5, the default table is transferred to the display table. There is no teaching of returning the closest match results to the requesting application as required in Claim 2. Hence, claim 2 is believed allowable for these additional reasons.

Claim 3 is a computer program product with similar limitations as the method of claim 1 and is believed allowable for the reasons for allowing claim 1 but additionally, claim 3 as amended calls for the simulating to be performed in part by "providing a reference to a cell in a default colormap, whereby creation of and swapping to the requested private colormap are not performed by the computer program product." Young teaches the creation of a private colormap and hence provides no teaching for referring to the default map rather than the private colormap. Aschenbrenner fails to overcome this deficiency as it is not directed to the simulation of a private colormap using the default colormap and transparently providing references to cells in the default map. Claim 4 depends from claim 3 and provides similar limitations as claim 2, and claim 4 is believed allowable for the reasons for allowing claim 3 and for allowing claim 2.

New claim 7 provides additional protection for the inventive idea of treating read-only color cell requests differently than other requests. Young or Aschenbrenner does not show this feature. According to the invention, if a client requests a read-only color then a closest match is performed rather than allocating the requested color (by taking up unallocated cell in the default map). Claim 8 is provided to further protect the idea that simulating involves associating a cell in a secondary lookup table with a location of a cell in the default colormap. Then when a request is intercepted, the location of the cell in the default colormap is returned to the application rather than the location of a cell in a private colormap. This feature is not shown by Young or Aschenbrenner taken alone or in combination.

Conclusion

In view of all of the above, the pending claims are believed to be allowable and the case in condition for allowance, which action is respectfully requested.

No fee is believed to be required by this response. Should any fees be required, please charge Deposit Account 50-1123. Should any extension of time be required, please consider this a petition therefore and charge the required fee to Deposit Account 50-1123.

Respectfully submitted,

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MARKED UP VERSION SHOWING CHANGES

IN THE CLAIMS:

1. (Amended) A method of reducing colormap flashing on a display system, the display system having a frame buffer which provides a single hardware colormap, the method comprising the steps of:

intercepting a request from an application program for an allocation of a private colormap; and

transparently simulating the allocation of the private colormap using a default colormap, wherein the default colormap is retained in the frame buffer during the simulating and the simulating includes allocating a secondary lookup table for storing information received from the application program relating to the intercepted request.

2. (Amended) The method of claim 1, wherein said step of transparently simulating the allocation of a private colormap further comprises:

[allocating a] storing in the secondary lookup table [for storing] information received from said application program relating to one or more requested colors privately allocated by said application program;

performing a closest match of said requested color to a color stored in said default colormap; and

returning said closest match to said application program.

3. (Amended) A computer program product, comprising:

a computer usable code storage medium;

computer readable code embodied in said storage medium for reducing colormap flashing on a display system, the display system having a single hardware colormap, the computer readable code comprising:

computer readable code devices to cause a computer to effect intercepting a request from an application program for an allocation of a private colormap; and

computer readable code devices to cause a computer to effect transparently simulating the allocation of the requested private colormap [using] by providing a reference to a cell in a default colormap, whereby creation of and swapping to the requested private colormap are not performed by the computer program product.